

WHAT IS CLAIMED IS:

1. A method for preventing or reducing ischemic damage in the central nervous system of a mammal, said method comprising administering intranasally (IN) a 5 therapeutically effective amount of insulin-like growth factor-1 (IGF-I) or biologically active variant thereof to the central nervous system of said mammal, wherein said therapeutically effective amount comprises about 0.10 mg to about 3.0 mg per kg body weight of said mammal.
- 10 2. The method of claim 1, wherein said IGF-I is human IGF-I or biologically active variant thereof, wherein said variant retains IGF-I activity and has at least 70% sequence identity to the amino acid sequence for human IGF-I.
- 15 3. The method of claim 1, wherein said mammal is a human and wherein said IGF-I is human IGF-I.
- 20 4. The method of claim 1, wherein said ischemic damage is selected from the group consisting of a neurologic deficit, edema, and coagulation necrosis of a tissue of said central nervous system.
- 25 5. The method of claim 4, wherein said coagulation necrosis of said tissue results from death of cells selected from the group consisting of neuronal cells and glial cells.
- 30 6. The method of claim 1, wherein said ischemic damage is caused by stroke, multiple infarct dementia, cardiac arrest, shock, hypotension, perinatal asphyxia, traumatic injury to the central nervous system, or a cardiovascular surgical procedure.
7. The method of claim 6, wherein said ischemic damage is caused by stroke.

8. The method of claim 1, wherein said therapeutically effective amount comprises about 0.50 mg to about 2.0 mg per kg body weight of said mammal.

9. The method of claim 8, wherein said therapeutically effective amount  
5 comprises about 1.0 mg to about 1.5 mg per kg body weight of said mammal.

10. The method of claim 1, wherein said administering comprises applying said therapeutically effective amount of IGF-I or variant thereof to an upper one-third of a nasal cavity.

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11. The method of claim 10, comprising applying said therapeutically effective amount of IGF-I or variant thereof to an olfactory area in said upper one-third of said nasal cavity.

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12. The method of claim 10, comprising applying said therapeutically effective amount of IGF-I or variant thereof to a roof of a nose.

13. A method for treating a mammal following an ischemic event affecting the central nervous system of said mammal, said method comprising administering  
20 intranasally (IN) a therapeutically effective amount of insulin-like growth factor-1 (IGF-I) or biologically active variant thereof to the central nervous system of said mammal, wherein said therapeutically effective amount comprises about 0.10 mg to about 3.0 mg per kg body weight of said mammal.

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14. The method of claim 13, wherein said IGF-I is human IGF-I or biologically active variant thereof, wherein said variant retains IGF-I activity and has at least 70% sequence identity to the amino acid sequence for human IGF-I.

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15. The method of claim 13, wherein said mammal is a human and wherein said IGF-I is human IGF-I.

16. The method of claim 13, wherein said ischemic event is selected from the group consisting of stroke, multiple infarct dementia, cardiac arrest, shock, hypotension, perinatal asphyxia, and traumatic injury to the central nervous system.

5 17. The method of claim 16, wherein said ischemic event is stroke.

18. The method of claim 13, wherein said therapeutically effective amount comprises about 0.50 mg to about 2.0 mg per kg body weight of said mammal.

10 19. The method of claim 18, wherein said therapeutically effective amount comprises about 1.0 mg to about 1.5 mg per kg body weight of said mammal.

15 20. The method of claim 13, wherein said administering comprises applying said therapeutically effective amount of IGF-I or variant thereof to an upper one-third of a nasal cavity.

21. The method of claim 20, comprising applying said therapeutically effective amount of IGF-I or variant thereof to an olfactory area in said upper one-third of said nasal cavity.

20 22. The method of claim 20, comprising applying said therapeutically effective amount of IGF-I or variant thereof to a roof of a nose.

25 23. The method of claim 13, wherein said treating results in a reduction in ischemic damage in the central nervous system of said mammal.

24. The method of claim 23, wherein said ischemic damage is edema.

30 25. The method of claim 23, wherein said ischemic damage is coagulation necrosis of a tissue in the central nervous system.

26. The method of claim 23, wherein said ischemic damage is a neurologic deficit.